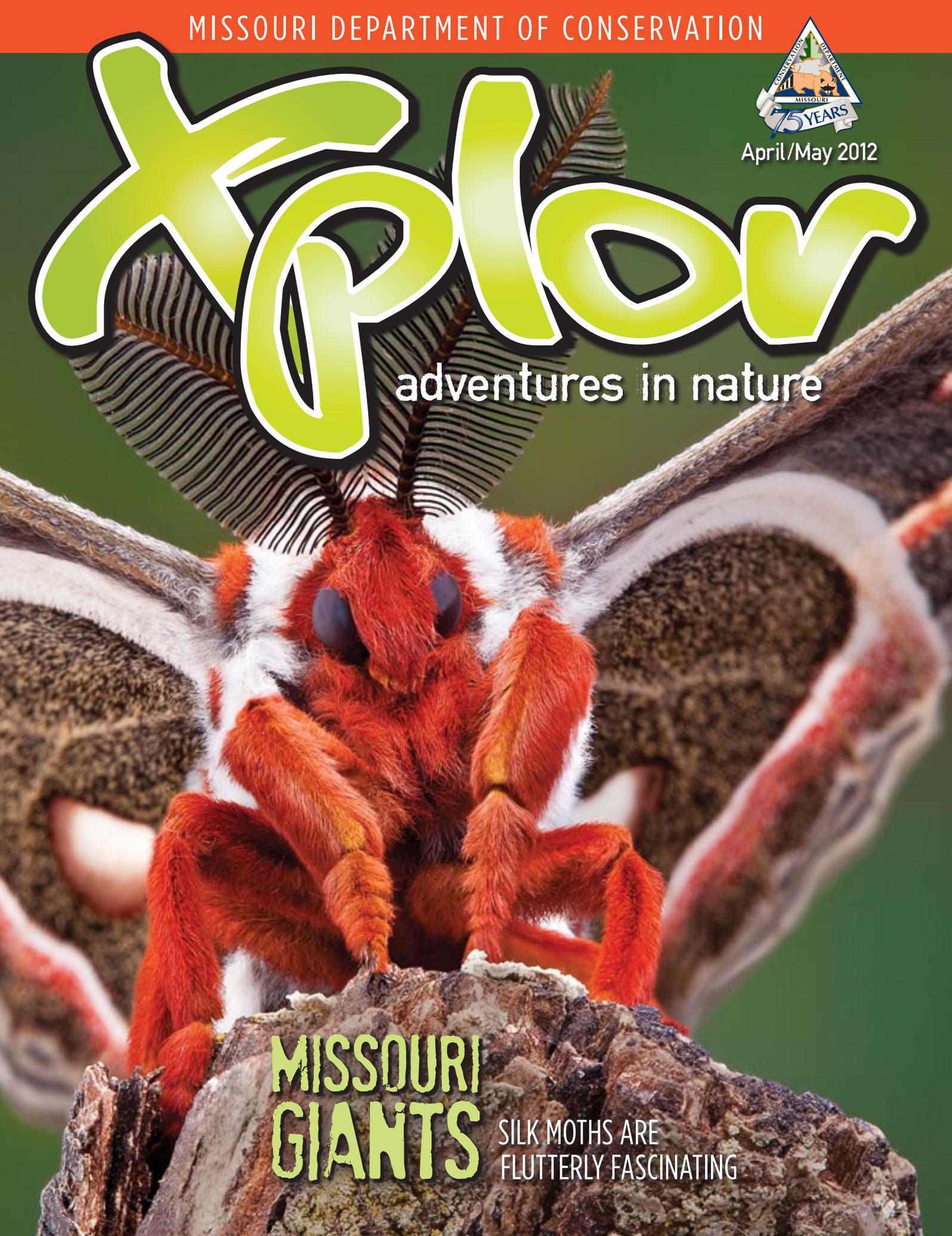




April/May 2012

Xplor

adventures in nature



**MISSOURI
GIANTS**

SILK MOTHS ARE
FLUTTERLY FASCINATING

CONTENTS



Luna moth

Xplor

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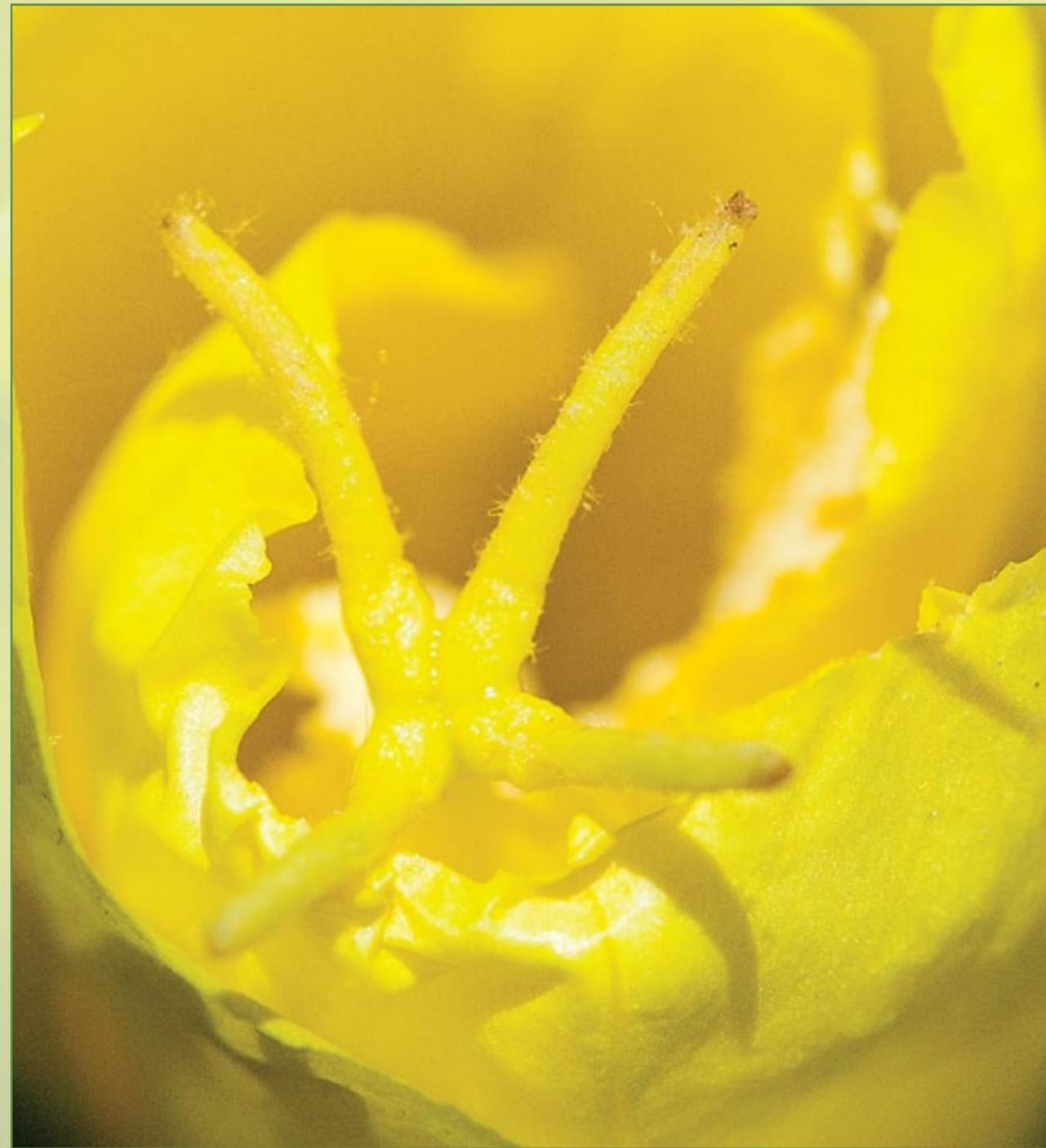
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We recycle. You can, too!
Share *Xplor* with friends.

WHAT IS IT?

DON'T KNOW?
Jump to Page 16 to find out.



ON THE COVER



CECROPIA MOTH
photo by Cathy Keifer/
Shutterstock.com

- 6 **Giants of the Night**
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Three-toed box turtle

ON THE WEB

Visit xplormo.org for cool videos, sounds, photos, fun facts and more!

- 1 I'm a late bloomer who likes it hot and sunny.
- 2 The night shift's the right shift to catch drift of my whiff.
- 3 A rose by any other name wouldn't be so prim.
- 4 Catch me while you can. I'm here tonight, gone tomorrow.

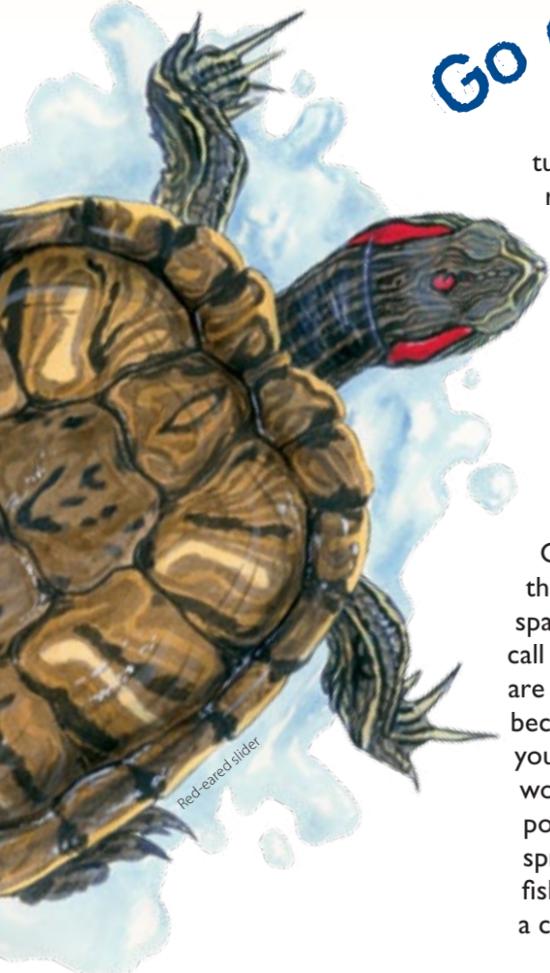
YOU discover



April and May are Goldilocks months—not too hot nor too cold. Wildflowers pop up, songbirds migrate, and fish finally find their appetites. Here are just a few things to discover.

Go on a TURTLE safari.

Every spring for eons, turtles have awoken from their winter sleep and plodded or paddled across Missouri's hills and waterways to search for warm places to bask. This makes April the perfect month for a turtle safari. Watch for box turtles trudging across roads, search streams for river cooters, and check each log in a lake for painted turtles. See how many of Missouri's 17 kinds of turtles you can spot. For a *turtle-riffic* guide to Missouri's shelliest reptiles, visit xplormo.org/node/17128.



Go FISH!

Some people call them panfish because they're the perfect size to fry in a pan. Others call them sunfish because they display bright colors during spawning season. Whatever you call them, fish such as bluegill are perfect for beginning anglers because they're easy to catch—all you need is a pole, line, hook and worm—and they live in nearly every pond in Missouri. Cast a line this spring, and if you catch your first fish, celebrate the event by printing a certificate at mdc.mo.gov/node/10474.



Peer at PEREGRINES.

Peregrine (*pair-uh-grin*) falcons are nature's quickest creatures. When diving through the sky to catch prey, falcons free fall faster than 200 miles per hour. Now, a live webcam offers a bird's-eye peek at the lives of these blisteringly fast birds. To watch a pair of peregrines nest and raise their chicks atop a building in St. Louis, swoop over to mdc.mo.gov/node/16934.



Make a DIRT shirt.

April showers bring May flowers—and lots of mud. Put that mud to use by making a dirt shirt. Ask your parents for a clean white T-shirt and some vinegar. Find some thick mud, scoop it into a cup, and pour in vinegar until the mud feels like pudding. Use the mud to paint a design on your shirt. To make the design permanent, let the shirt sit in the sun for at least four hours, rinse the shirt in cold water, clean it in a washing machine, and run it through a hot dryer.

SEARCH for lost LADYBUGS.



Help! North America's ladybugs are disappearing from places where they were once quite common. Scientists think lady beetles from other places, such as Asia, are crowding out our hometown ladybugs. They're asking kids to join the Lost Ladybug Project and search for ladybugs. This will help scientists find out where native ladybugs still exist and where foreign ladybugs are popping up. To learn more, fly away home to lostladybug.org.

Explore a mini DESERT.

Glades are dry, rocky patches of soil clinging to south-facing Ozark hills. They're also home to some of Missouri's most interesting animals, including fleet-footed roadrunners, colorful collared lizards and grasshoppers that are camouflaged so superbly they disappear against lichen-covered rocks. If those aren't reasons enough to visit a glade, in late May a painter's palette of wildflowers bloom. We've listed some great glades to visit at xplormo.org/node/17129.



Don't miss the chance to Discover Nature at these fun events.

Hug a tree during **MISSOURI'S ARBOR DAY.**
Burr Oak Woods Conservation Nature Center, Blue Springs
April 7, 8 a.m.–4:30 p.m.
For info, call 816-228-3766



Bag a gobbler during **SPRING TURKEY SEASON.**
Statewide
April 16 to May 6, 2012
For info, visit mdc.mo.gov/node/4065

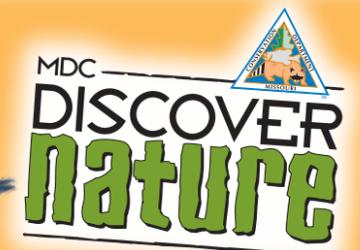
Compete in the **OUTDOOR OLYMPICS.**
Twin Pines Conservation Education Center, Winona
May 12, 10 a.m.–2 p.m.
Register at 573-325-1381



Attend nature's evening **SPRING SYMPHONY.**
Runge Conservation Nature Center, Jefferson City
April 26, 7–8:30 p.m.
Register at 573-526-5544



Flock to the nature center to celebrate **MIGRATORY BIRD DAY.**
Cape Girardeau Conservation Nature Center
May 5, 7 a.m.–4 p.m.
For info, call 573-290-5218



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at xplormo.org/node/2616.

PREDATOR

VS.

PREY

The struggle to survive isn't always a fair fight. Here's what separates nature's winners from its losers.

illustration by David Besenger

Keen Eyes

Bass see in every direction except directly behind and below. Plus, their eyes gather light five times better than yours, so hunting in shadowy water is no problem.

Distant Touch

A row of nerve cells called a lateral line runs along each side of a bass. It detects waves in the water, allowing bass to feel things without actually touching them. The lateral line is so sensitive, bass can detect crayfish 20 feet away.

Pinchy Pincers

Crayfish use claw-like pincers to snare food and deliver painful pinches to predators who get too close.

Backward Blast

Crayfish use their fan-shaped tails like canoe paddles. By squeezing their tummy muscles, crayfish can swoosh backwards at nearly 25 miles per hour.

Big Mouth

A smallmouth's maw isn't small. Fully opened, it's wider than the fish's body. When a bass opens wide, water rushes in, sucking anything nearby inside, too.

Camouflaged Armor

A crayfish's exoskeleton is like armor and blends in perfectly with rocky streambeds.

AND THE WINNER IS...

Smallmouths often pass on large, feisty crayfish, but gobble small ones every chance they get. Unless this shrimp craydad can dart under a rock, it's bass bait.

In April and May, male turkeys gobble and show off to attract a mate. While their minds are preoccupied with finding girlfriends, gobblers can be lured in close by mimicking the sounds of a lovesick hen. Hunters use a variety of homemade or store-bought turkey calls for this. You can make your own turkey call out of recycled kitchen trash.

GATHER THESE SUPPLIES

- > Empty yogurt cup (Make sure it's washed!)
- > Drinking straw
- > Scissors
- > Duct tape
- > Brown, green or black paint



PUT YOUR CALL TOGETHER

- > Trim the straw so it's a couple inches taller than the yogurt cup.
- > Tape the straw inside the yogurt cup. Leave a space about the width of your pinky between the bottom of the straw and the bottom of the cup.



- > Paint the cup with dull brown, green or black paint, or use camouflage duct tape to cover the cup as we've done in the picture. Turkeys are wary and have good eyesight. If a turkey spots a plastic cup shining in the sun, all you'll see is the southbound end of a northbound bird!

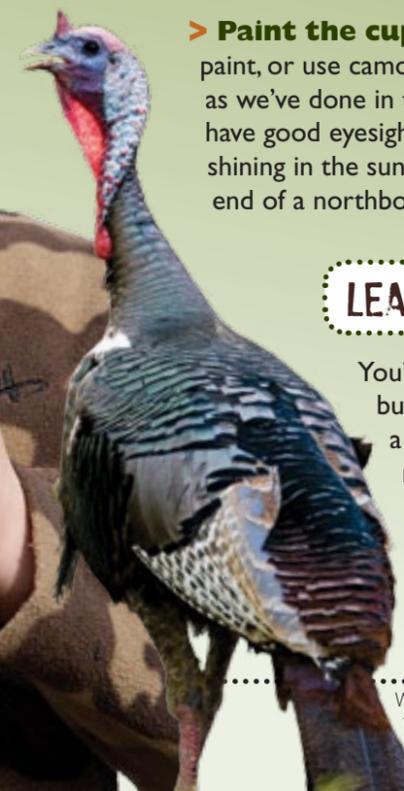
LEARN TO TALK TURKEY

You've probably heard turkeys gobble, but the sound you want to make is a yelp. To a turkey, "yelp, yelp, yelp" means "here I am, come on over." To make this sound, hold the tip of the straw in your lips and suck in like you're giving someone a kiss. With practice, you'll soon be able to produce a sharp yelp.

Wild turkey

HOW TO

Make a TURKEY CALL



GIANTS OF THE NIGHT

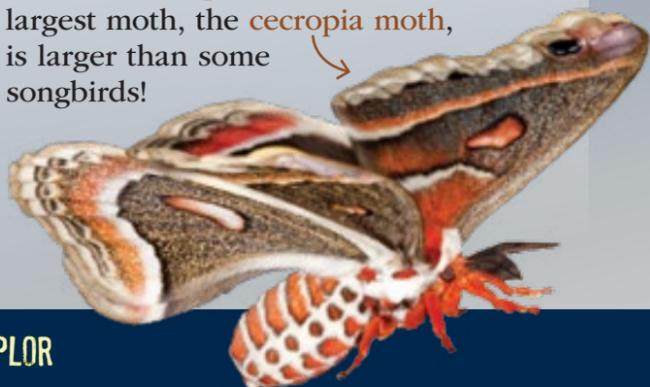
by Matt Seek • photos by Donna Brunet

The moth flutters silently, mysteriously through the night. Her wings are impossibly large and glow green like an emerald in pale moonlight. She is a luna moth, named for the moon, for the night, and on this, her last evening on Earth, she's searching for a place to lay her eggs.



BIG, FLUFFY AND FLUTTERY

Luna moths belong to the silk moth family of insects. About 1,500 kinds of silk moths flutter worldwide. Most live in tropical places, but 13 kinds live in Missouri. Silk moths have fuzzy bodies and velvety wings that out-bling many butterflies. Some silk moths have wing spots that look like large, glaring eyes. When the moths unfold their wings, the eyespots show, scaring away would-be predators. Silk moths are some of nature's largest insects. The atlas moth of Southeast Asia is bigger than a dinner plate, and Missouri's largest moth, the **cecropia moth**, is larger than some songbirds!



CHUBBY GREEN EATING MACHINES

Once they hatch, baby silk moths have one thought in their squishy little brains: food. Silk moth caterpillars eat their eggshells, then chow down on leaves. Newborn caterpillars are mosquito-sized, but soon grow long and chubby. Older caterpillars grow fleshy spikes that appear dangerous, but io moth caterpillars are the only silk moth caterpillars in Missouri that can sting with their spikes.

Cecropia, polyphemus and luna caterpillars grow as big as your dad's pointy finger, but regal moth caterpillars win first prize for size. Called hickory horned devils because of their inch-long spikes, these eating machines stretch 6 inches long—about the size of a hot dog!



FROM BEASTLY TO BEAUTIFUL

After two months of near-constant eating, silk moth caterpillars chomp their last leaf then search for somewhere to turn into a pupa (*pyoo-puh*). Think of a pupa as a silk



CECROPIA COCOON

moth's teen years—a time when the baby caterpillar grows into an adult moth. Regal and imperial caterpillars burrow underground to pupate. Other caterpillars spin cocoons that camouflage and protect the fragile pupae. Cecropia caterpillars bind their cocoons to tree branches. Polyphemus caterpillars wrap leaves around their cocoons for extra camouflage. Luna caterpillars let their cocoons drop from trees, so they're buried beneath a blanket of leaves.

LOVE IS IN THE AIR

If silk moth caterpillars are all about eating, then silk moth adults are all about romance. When silk moths emerge from their cocoons or burrows, they lack mouths and can't eat. The only thing fueling their flutter is fat they put on as caterpillars. Once they burn through that fat, they die.

Because time is short, female moths speed courtship along by releasing pheromones (*fair-ob-mones*). Pheromones are like perfumes that male moths find irresistible. Males use their feathery antennae to follow pheromones to females. Each kind of silk moth releases pheromones at a certain time of night. This "calling time" keeps moths with similar-smelling pheromones from attracting the wrong mates.

Male moths mate one to three times but rarely live longer than two weeks. Females usually die once their eggs are laid. But about 10 days after adult moths fold their wings forever, an army of tiny but very hungry caterpillars hatch and begin inching their way toward becoming giants of the night.

GIANTS OF THE NIGHT

GENTLY PULL OUT THESE PAGES FOR A POSTER OF LIFE-SIZE SILK MOTHS



ADULTS ACTIVE



CALLING TIME



IO MOTHS

Male and female io moths aren't the same color. Males are yellow, and females are reddish-brown.



MAY TO SEPTEMBER



DUSK TO MIDNIGHT



IMPERIAL MOTHS

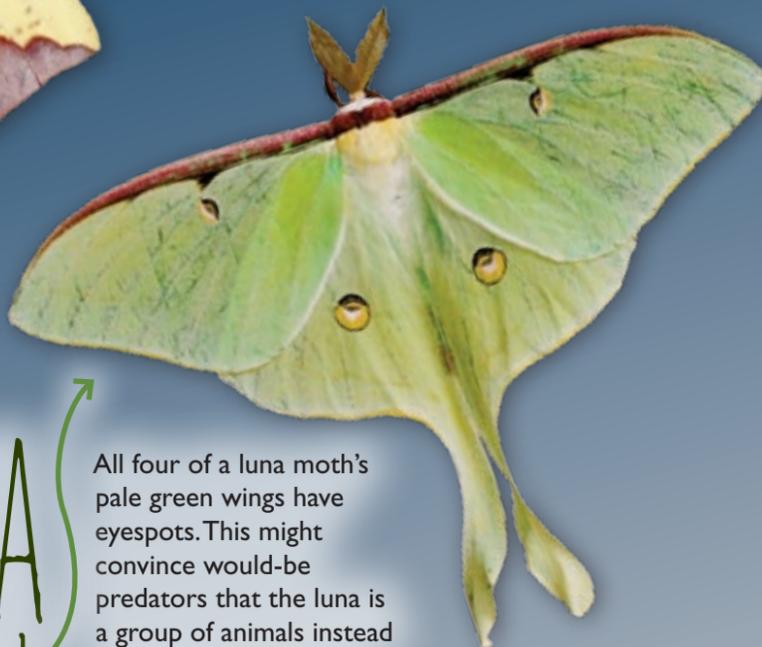
Imperial moths don't spin cocoons. They change from caterpillars to moths in underground burrows.



MAY THROUGH AUGUST



11 P.M. TO 1 A.M.



LUNA MOTHS

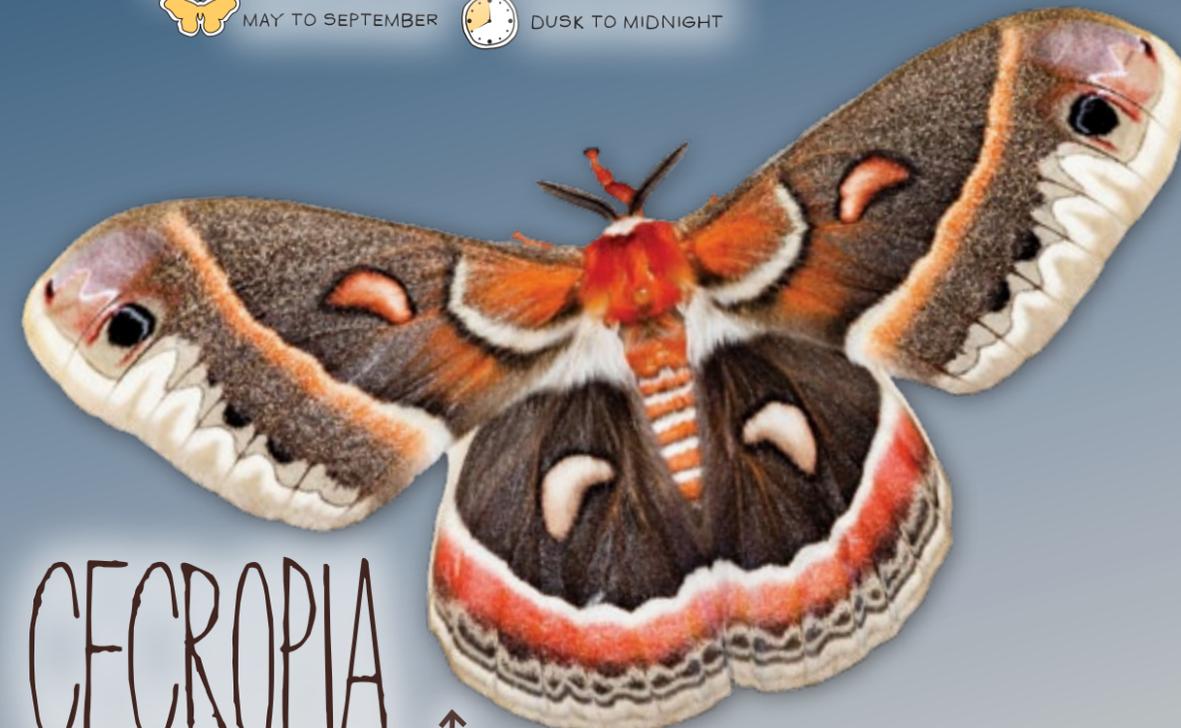
All four of a luna moth's pale green wings have eyespots. This might convince would-be predators that the luna is a group of animals instead of a single tasty insect.



APRIL THROUGH AUGUST



11 P.M. TO 1 A.M.



CECROPIA MOTHS

Some think the eyespots and patterns on the upper tips of a cecropia's wings look like snakes' heads.



LATE APRIL THROUGH JUNE



3 A.M. TO SUNRISE



REGAL MOTHS

Regal moth caterpillars (called hickory horned devils) are the largest caterpillars in Missouri, reaching nearly 6 inches long.



MAY THROUGH AUGUST



9 P.M. TO MIDNIGHT

Regal moth by Ronald F. Billings, Texas Forest Service, Bugwood.org



POLYPHEMUS MOTHS

Named after a giant from Greek mythology who had a huge single eye, polyphemus moths use their large eyespots to startle would-be predators.



MID-APRIL THROUGH AUGUST



11 P.M. TO 1 A.M. AND 3 A.M. TO SUNRISE



THE ADVENTURES OF BIONIC BIRD AND ROBO-DEER

Most hunters obey the law. When they don't, conservation agents are pros at catching them. But to bust some poachers, conservation agents need a little help. That's where we come in.

My name: Bionic Bird. My partner—the young buck who doesn't talk—he's Robo-Deer. Together we form an elite, top-secret crime-fighting team. Our job? Helping conservation agents bust Missouri's laziest poachers.

OPERATION ROBO-CRITTER

I used to be a normal turkey. I ate acorns. I courted hens. I minded my business. Then one fateful day, a poacher shot me. Luckily, a conservation agent nabbed the bad guy and kept my body for evidence.

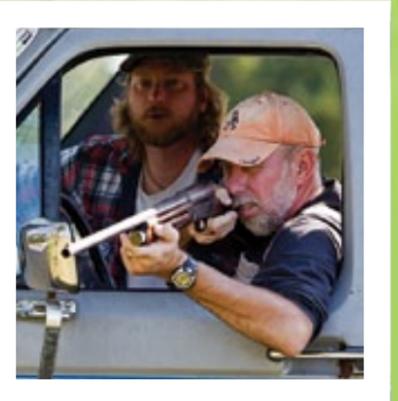
Robo-Deer stays tight-lipped about his beginnings. I've seen his file, though, and all I'll say is this: different poacher, same story.

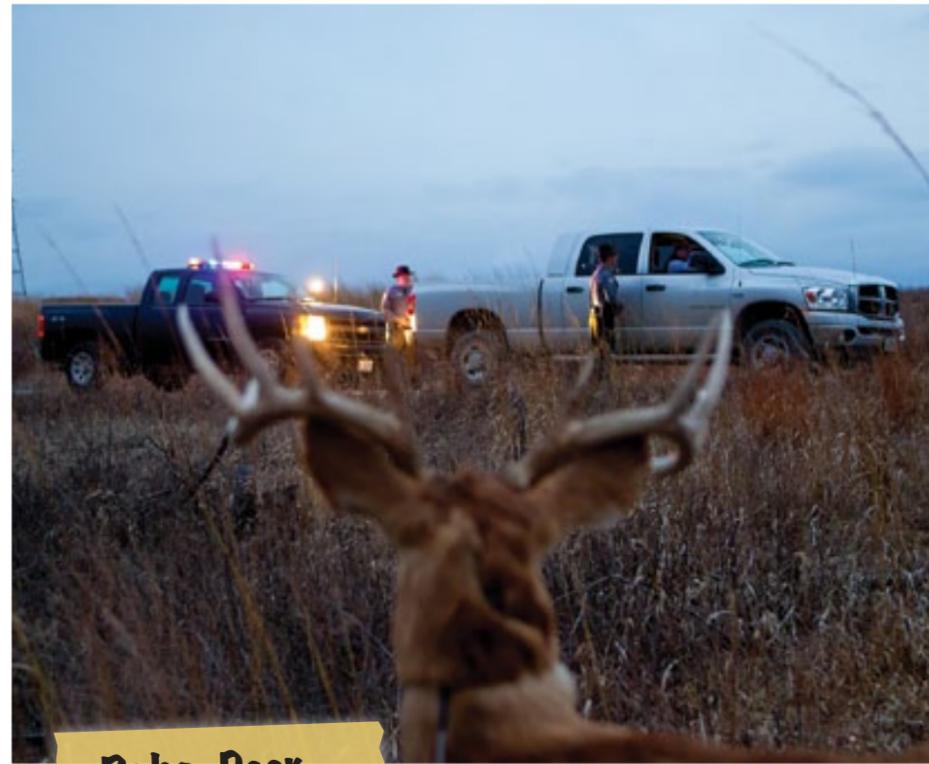
The Conservation Department had the technology to rebuild us—better, stronger, faster. They screwed wheels on my feet and tied a remote-controlled car to my chest. They gave Robo-Deer a robotic head that turned by remote control. They offered us new lives, and all they asked in return was help catching poachers.

SUSPECT PROFILE

Road hunters drive around until they spot a deer or turkey. Then they shoot at it from the road. Sometimes they don't even get out of their vehicles!

That's dangerous with a capital "D." Road hunters don't have a clue what lies behind their targets. A house or another person could be back there, in the line of fire. That's the biggest reason road hunting is illegal.



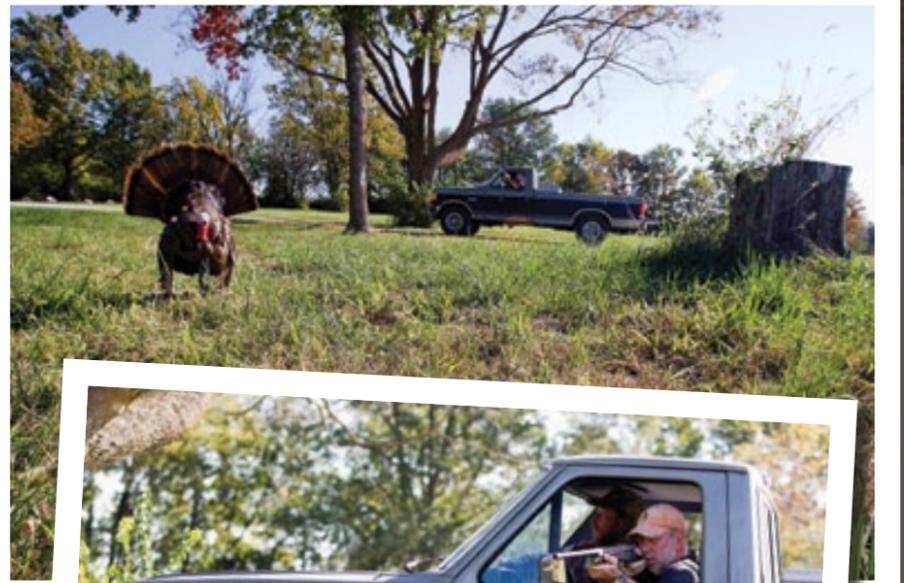


Robo-Deer

November 18, 2009

- 4:21 p.m.**—Conservation Agent Houf installs fresh batteries in Robo-Deer and sets him in a pasture approximately 100 yards from a gravel road.
- 5:28 p.m.**—From a safe, hidden location, Agent Houf watches a silver pickup creep down the gravel road and roll to a stop. The beam from a spotlight pierces the darkness, coming to rest on Robo-Deer. A rifle barrel pokes slowly out of the truck's other window. A man's voice breaks the stillness: "Shoot 'em!"
- 5:29 p.m.**—BLAM! The poacher fires. Robo-Deer takes a bullet but doesn't drop. BLAM! The poacher shoots again. Robo-Deer stands strong.
- 5:30 p.m.**—Agent Houf calls his partner, another conservation agent who is waiting out of sight in a truck up the road.
- 5:31 p.m.**—The poacher gets out of the pickup, steadies his rifle on the hood, takes careful aim, and fires yet another shot. Robo-Deer catches more lead, but still does not fall.
- 5:32 p.m.**—Agent Houf's partner skids his truck to a stop behind the silver pickup. Before the gravel dust settles, the agent hops out and orders the poacher to lay his rifle on the ground. In the glare of the agent's headlights, the poacher's face looks first confused, then defeated. Out in the field, Robo-Deer's snout curls into a barely noticeable smile—another poacher caught red-handed.

To see videos of road hunters caught in the act, visit youtube.com/mohunting and click on "Deer Decoy."



April 21, 2010

- Conservation Agent McArdle had been trying to catch a notorious father and son team of road hunters for three years straight. The poachers had passed up taking shots at stuffed turkeys because the decoys looked fake and didn't move. Agent McArdle knew to catch these poachers he needed help from Bionic Bird.*
- 5:42 a.m.**—Agent McArdle sets up Bionic Bird in an open field 25 yards off a rural road favored by the road-hunting team.
- 6:00 a.m.**—Agent McArdle hides in the brush beside the road. He has two other conservation agents waiting in trucks, and he radios each of them to make sure they're ready.
- 6:51 a.m.**—Agent McArdle's cellphone rings. A school bus driver has spotted the road hunters. They're driving down the road where Bionic Bird is waiting!
- 6:54 a.m.**—The road hunters' pickup stops beside Bionic Bird. Agent McArdle uses the remote control to move Bionic Bird a couple feet. Nothing happens. The conservation agent moves Bionic Bird a little farther. Still nothing. Agent McArdle starts to worry. Maybe the poachers won't be fooled. He moves Bionic Bird a few more feet ... BOOM!
- 6:55 a.m.**—After shooting Bionic Bird, the road hunters speed away in their pickup. Agent McArdle calmly calls another agent to chase them down.
- 7:07 a.m.**—The other conservation agent catches the road-hunting duo at their house. After hearing every detail of the crime they had just committed, the poachers admit to shooting from the road.
- 7:11 a.m.**—Agent McArdle inspects Bionic Bird. The turkey has taken 26 shotgun pellets in his head and chest, but feels no pain. He's too busy basking in the glory of busting two more bad guys.

WILD JOBS

COLLARED-LIZARD RESEARCHER **AMY CONLEY** SNARES SKITTISH REPTILES WITH A LASSO OF DENTAL FLOSS.

Eastern collared lizard

Q: YOU LASSO LIZARDS WITH DENTAL FLOSS. REALLY?

A: Really. I make a noose with the floss, tie it to the end of a fishing pole, then inch the loop over a lizard's head. Wind blows the lasso a bit, but most lizards stay put because it's just floss swinging around.

Q: LASSOING LIZARDS SOUNDS FUN.

A: It's like fishing and hunting mixed together. It's the best part of my job.

Q: SO WHAT'S THE WORST PART?

A: Working on a glade in the summer can be blazing hot, but ticks are the worst. I never leave home without duct tape for pulling tiny ticks off my clothes and skin.

Q: WHAT DO YOU DO WITH A LIZARD AFTER YOU CATCH IT?

A: I measure and weigh it, take a tissue sample, and paint a number and some marks on the lizard. That way I can tell one from another at a distance.

Q: DO COLLARED LIZARDS BITE?

A: Yes, but their teeth aren't sharp. When an adult grabs you, it hurts, but you bruise more than bleed. I let baby lizards clamp down on my ears then wear them as living earrings. It's a rite of passage for lizard researchers.

Q: WHAT DO YOU HOPE TO LEARN?

A: To most people, all glades look the same. But to a collared lizard, some glades are better than others. I'm trying to nail down what habitat pieces make one glade more appealing than another.

STRANGE, but TRUE!

YOUR GUIDE TO ALL THE UNUSUAL, UNIQUE, AND UNBELIEVABLE STUFF THAT GOES ON IN NATURE



AMERICAN TOADS inflate their bodies like warty balloons to make it tough for snakes to swallow them. Got a frog in your throat? Nope, a toad.

Only female **MOSQUITOES** suck blood. They need the protein in blood to lay eggs. Males sip flower nectar and plant juices.



To lure predators away from their chicks, **KILLDEER** moms and pops thrash about and drag their wings pitifully, pretending that their wings are broken.

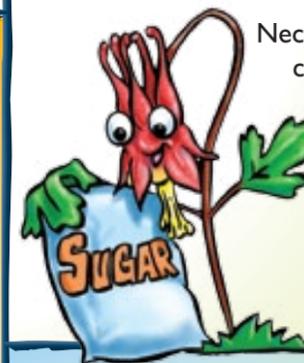
CHANNEL CATFISH dads guard their nests from egg-eating predators for nearly two weeks until the eggs hatch and the baby catfish grow large enough to swim away.



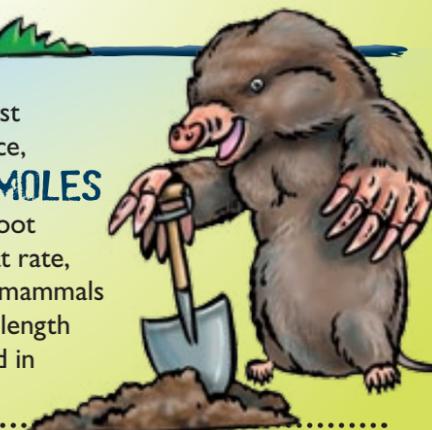
THREE-TOED BOX TURTLES are Missouri's longest-living reptiles. Most reach their 60th birthday, and some live 100 years or longer.



LITTLE BROWN BATS are better than bug zappers for keeping insects at bay. In an hour of hunting, a single bat can stuff its belly with 1,000 bugs!



Nectar from red **COLUMBINE** contains twice as much sugar as nectar from other colors of columbine. This extra jolt of sweetness helps attract energy-guzzling pollinators such as hummingbirds.



When digging just below the surface, **EASTERN MOLES** tunnel about a foot a minute. At that rate, the 6-inch-long mammals can burrow the length of a football field in five hours.

XPLOR MORE

Goodness Snakes Alive!

In April, many snakes emerge from winter dens to search for sunny spots in which to bask. While they're soaking up sun, you can easily watch snakes from a safe distance. Before you head off on a snake safari, fill out this crossword to learn a few cool facts about Missouri's legless reptiles. For more on snakes—or if you get stumped by a clue—visit mdc.mo.gov/node/6646.

Across

- When it feels threatened, this venomous water snake opens its mouth wide to show the cotton-white lining inside.
- This little snake has a drab gray back but a bright yellow ring around its neck. If threatened, it waves its red tail to lure predators away from its head.
- Missouri's largest snake can grow 8 feet long! Its loud hiss sounds like a bull's snort.
- Speckled like someone spilled salt and pepper on it, this snake often preys on other snakes—even venomous ones! In fact, this "king of snakes" is immune to the venom of Missouri's pit vipers.
- With rough green scales, a long tail for grasping branches and a habit of swaying like a windblown leaf, this gentle snake is adapted to life in the trees.
- This snake is named for its small size, habit of burrowing, pink belly, and especially for what it eats: earthworms.

Down

- This small, endangered rattlesnake lives in just a few marshy grasslands in the north half of the state. In winter, it often hibernates in crayfish burrows.
- To scare predators away, this harmless, pig-snouted snake flattens its neck like a cobra. If that doesn't work, the snake pretends to be dead.
- Although it's Missouri's largest venomous snake, this serpent is quite shy and hides in rocky, timbered areas.
- This common snake is streaked with two long yellow stripes and often hunts in marshy areas.
- Missouri's most common constrictor (a snake that squeezes its prey to death) eats mice, rats and other rodents but also climbs trees to raid bird nests.
- Missouri's fastest snake can slither 4 miles per hour. Its name comes from the fact it looks like a whip used on horses that pull stagecoaches.
- Missouri's most common venomous snake is the color of a new penny and is patterned to blend in with dead leaves on the forest floor.



ANSWER TO WHAT IS? IT?

FROM PAGE 1

Missouri evening primrose blooms from May to August in dry, rocky areas throughout the Show-Me State. Although every plant produces lots of showy yellow flowers, each flower lasts just one day. The blossoms open at night when their sweet-smelling fragrance and nectar attracts moths. The next morning, the flowers wither and drop.

Answers
Across: 1. Cottonmouth 3. Ring-necked snake 8. Bullsnake 11. Speckled kingsnake 12. Rough greensnake 13. Wormsnake
Down: 2. Massasauga rattlesnake 4. Hog-nosed snake 5. Timber rattlesnake 6. Common gartersnake 7. Black ratsnake 9. Coachwhip 10. Copperhead

SUBSCRIBE ONLINE

xplormo.org/node/2618

FREE TO MISSOURI HOUSEHOLDS

CRITTER CORNER

Belted Kingfisher



You feeling lucky, punk? With blue mohawks and noisy calls, belted kingfishers are the punk rockers of the bird world. Instead of diving off a stage, kingfishers dive into streams beak-first for breakfast. Once a kingfisher nabs a fish, it flies to a perch, flips the fish so it goes down headfirst, then swallows it whole.